

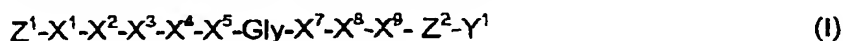
JC09 Rec'd PCT/PTO 22 JUN 2005

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PART 34 AMDT

Claims

1. A peptide of the amino acid sequence of formula (I)



or formula (II)



wherein

X¹ is an amino acid selected from the group Ser, His, Thr, Ala, Gln, Phe, Gly and Ile

X² is an amino acid selected from the group Tyr, Arg and Phe

X³ is an amino acid selected from the group Tyr, Ser, Asn, Glu, Asp and Thr

X⁴ is an amino acid selected from the group Ser, Ala, Gly, Asp and Phe

X⁵ is an amino acid selected from the group Asp and Ser,

X⁷ is an amino acid selected from the group Thr, Val, Met, Ser, Trp, Tyr, Leu and Ala

X⁸ is an amino acid selected from the group Tyr, Phe and Leu

X⁹ is an amino acid selected from the group Asp, Ser and Glu

Z¹ represent an amino acid residue capable of forming a disulphide bond, preferably a cysteine or a homocysteine residue, or a residue capable of forming a thioether preferably the residue is Q-C(=O) wherein Q represents -(CH₂)_n or -(CH₂)_n-C₆H₄ where n represents a positive integer 1 to 10 or is absent and

Z² represent an amino acid residue capable of forming a disulphide bond, preferably a cysteine or a homocysteine residue or is absent

Y¹ represents 1-10 amino acids or is absent

or pharmaceutically acceptable salts thereof.

2. A peptide according to claim 1 of the amino acid sequence

Cys-Ser-Tyr-Tyr-Ser-Asp-Gly-Val-Tyr-Asp-Cys, (SEQ ID NO 1),

Cys-His-Tyr-Ser-Ser-Asp-Gly-Thr-Tyr-Asp-Cys, (SEQ ID NO 2),

Cys-Thr-Tyr-Asn-Gly-Asp-Gly-Ser-Phe-Asp-Cys, (SEQ ID NO 3),

Cys-Ala-Tyr-Glu-Ala-Asp-Gly-Trp-Phe-Asp-Cys, (SEQ ID NO 4),

Cys-Ser-Tyr-Ser-Ala-Asp-Gly-Thr-Leu-Asp-Cys, (SEQ ID NO 5),

Cys-Gln-Tyr-Asp-Ser-Ser-Gly-Met-Tyr-Asp-Cys, (SEQ ID NO 6),

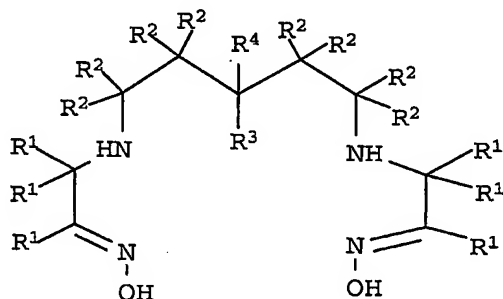
Cys-Phe-Phe-Asp-Ser-Ser-Gly-Tyr-Phe-Asp-Cys, (SEQ ID NO 7),

Cys-Thr-Tyr-Ser-Ala-Asp-Gly-Leu-Tyr-Asp-Cys, (SEQ ID NO 8),

Cys-His-Phe-Asp-Gly-Asp-Gly-Ser-Tyr-Asp-Cys, (SEQ ID NO 9),

Cys-Thr-Tyr-Glu-Pro-Ser-Gly-Met-Tyr-Asp-Cys, (SEQ ID NO 10),
 Cys-Gln-Tyr-Thr-Ala-Asp-Gly-Ala-Phe-Asp-Cys, (SEQ ID NO 11),
 Cys-Ile-Tyr-Glu-Ser-Asp-Gly-Met-Phe-Ser-Cys, (SEQ ID NO 12),
 Cys-Gly-Arg-Ser-Asp-Gly-Thr-Trp-Tyr-Glu-Cys, (SEQ ID NO 13) or
 Cys-Ser-Tyr-Tyr-Ala-Asp-Gly-Met-Tyr-Ser-Cys, (SEQ ID NO 14).

3. A targetable diagnostic and/ or therapeutically active agent of formula (III)
 V-L-Z Formula (III)
 wherein the vector V is a peptide according to claim 1- 2
 L represents a bond, a spacer or a linker and
 Z represents an antineoplastic agent, a reporter moiety or a group that optionally
 can carry an imaging moiety M.
4. An agent as claimed in claim 3 where Z is a chelating agent of Formula IV



(IV)

where:

each R^1 , R^2 , R^3 and R^4 is independently an R group;

each R group is independently H or C_{1-10} alkyl, C_{3-10} alkylaryl, C_{2-10} alkoxyalkyl, C_{1-10} hydroxyalkyl, C_{1-10} alkylamine, C_{1-10} fluoroalkyl, or 2 or more R groups, together with the atoms to which they are attached form a carbocyclic, heterocyclic, saturated or unsaturated ring.

5. An agent as claimed in any of the previous claims 3 to 4 wherein Z comprises a reporter moiety, M wherein the reporter moiety M comprises metal radionuclides,

paramagnetic metal ions, fluorescent metal ions, heavy metal ions or cluster ions.

6. An agent as claimed in claim 5 wherein the reporter moiety M comprises ^{80}Y , $^{99\text{m}}\text{Tc}$, ^{111}In , ^{47}Sc , ^{67}Ga , ^{51}Cr , $^{177\text{m}}\text{Sn}$, ^{67}Cu , ^{167}Tm , ^{97}Ru , ^{188}Re , ^{177}Lu , ^{199}Au , ^{203}Pb , ^{141}Ce or ^{18}F .

7. An agent as claimed in claims 3 to 6 where each reporter (Z) can carry a multiplicity of vectors V.

8. An agent as claimed in claim 3 where the antineoplastic agent Z represent cyclophosphamide, chloroambucil, busulphan, methotrexate, cytarabine, fluorouracil, vinblastine, paclitaxel, doxorubicin, daunorubicin, etoposide, teniposide, cisplatin, amsacrine or docetaxel.

9. A pharmaceutical composition comprising an effective amount of a compound of general Formula (III) or a salt thereof, together with one or more pharmaceutically acceptable adjuvants, excipients or diluents for use in enhancing image contrast in *in vivo* imaging or for treatment of a disease.

10. A method of generating enhanced images of a human or animal body previously administered with a contrast agent composition comprising a compound as claimed in claims 3 to 7, which method comprises generating an image of at least part of said body.